Department of Elementary and Secondary Education
Missouri Strategic Initiative for Economic Growth
Building a Globally Competitive Workforce

Dr. Chris Nicastro, Missouri Commissioner of Education
October 15, 2010

A. Identify the need or problem that negatively affects Missouri's economy

On many national measures Missouri's educational performance matches our geography—in the middle. If Missouri is not among top performers nationally and internationally, we simply cannot compete. For the first time in our nation's history, our youth will be challenged by the youth of other countries now competing for important positions in a workplace that is no longer defined by our borders, but is worldwide.

Missouri has benefitted from the strong reform agenda of the 1990's and our state standards have been shown to be among the nation's most rigorous, ranked by Education Next[1] as one of three states – along with Massachusetts and South Carolina – having world-class standards. Standards give educators and students targets for achievement, but assessment ensures that all are held accountable for achieving those standards. Unlike many other states, Missouri has had in place a rigorous, performance-based assessment. Because the standards and assessments are nationally comparable, students ranking proficient in the Missouri Assessment Program are competitive nationally and internationally. However, the number of students reaching proficiency is too low, hovering at 50% of students at each grade level in each content area.[2]

Missouri must increase the number of students reaching proficiency on state assessments and graduating from high school to be adequately prepared for postsecondary success, either in further academic work or in the workplace. These assessments are the first step in ramping up rigor and achievement in the state.

But more importantly, Missouri must show that its students compare favorably with students internationally. Budget restrictions have prohibited the state from participating in international assessments, although that participation is a goal for the Department.

B. Indicate the significance of the problem/opportunity or what would occur if the problem/opportunity is not addressed

A state's economic well-being is dependent on a competent, educated workforce. Today's climate is such that continual progress is a requirement, with worldwide standards rapidly rising. Maintaining a consistent rate of achievement is not good enough. A static environment will result in loss of industry and employment to other states and countries.

The reputation of a state's educational system also influences those considering a move to the state. Employees want to know that a state and its communities offer the best education possible for their children. That reputation greatly influences the "attractiveness" of an environment for new industry.

The Department of Elementary and Secondary Education recently organized a state summit on Science, Technology, Engineering, and Mathematics (STEM) to define issues related to developing students with the competence needed to be competitive in these important areas. Representatives from business, higher education, and K-12 education repeatedly emphasized the need for a consistent measure by which they can know that a student has demonstrated certain levels of competence upon leaving the K-12 system. Several businesses whose positions require STEM backgrounds were in attendance. One representative described ten current vacancies and very few applicants. These particular vacancies do not require advanced degrees, but good preparation in mathematics and science at the secondary level. Missouri's schools must gear up to supply industry with the competent workforce that they need.

C. Identify the data that validates the extent of the problem/need/opportunity

Missouri's data on assessment performance, graduation rates, Advanced Placement assessments, and college performance all point to the need to tighten instruction and heighten expectations in Missouri schools:

- Average student ACT scores in Missouri have remained level at 21.6 since 2005.[3]
- The number of students leaving high school before graduation is high: 12,000 dropped out in 2010, compared with 10,000 in 2005.[4]
- Thirty percent (30%) of Missouri students take Algebra 1 in 8th grade, compared to 47% in top performing states.[5]
- Ten percent (10%) of Missouri 11th and 12th graders earned 3+ points on Advanced Placement exams (criterion for most colleges to award credit) compared with 34% of 11th and 12th graders in top performing states.[6]
- In the fall of 2009, 38% of freshmen in Missouri colleges required at least one remedial course—double the number requiring remediation five years ago.[7]
- Four out of five Missouri students entering college never attain a college degree.[8]

Many students expressing interest in high growth jobs in Missouri did not perform at the necessary level on the ACT. For example, of the students who indicated an interest in health related fields, only 15 percent scored at the necessary level in science on the ACT in 2010.[9]

These data support the need to focus curriculum across the state—especially in STEM content areas—and to highlight the importance of specific demonstration of competence on both state and international assessments among Missouri teachers and students.

D. Identify best practices related to this issue

There are multiple variables that affect student achievement. Generally, those deemed to be the express responsibility of the educational institutions themselves falls into three broad categories: curriculum, instruction and assessment. Curriculum and assessment are areas in which the state has responsibility, and the following are specific practices currently implemented and those being planned to tighten the curriculum offered to Missouri students and to assess competence in each curriculum area.

Curriculum

Missouri has committed to the adoption of the Common Core Standards for K-12, as well as the College- and Career-Readiness Standards. Because improvement starts with early childhood and involves the entire P-20 continuum, Missouri's Early Learning Standards are being aligned to the Common Core Standards for K-12 to ensure that every child enters kindergarten ready to learn.

The Office of College and Career Readiness now includes core curriculum and assessment specialists as well as those in involved in career and technical education. An advisory team of stakeholders across the state which includes both core educators and those in career and technical education has been formed. Actions will include:

- Analysis of existing competencies in core courses and career and technical courses for similarities and/or duplication
- Development of common assessments for core education requirements so that student competence is based on demonstration, rather than "seat time" in a particular course
- Requirement of a program of study for each Missouri student which outlines course work and career path from grades 7 through 14

The department will develop model curriculum, including alternative pathways to awarding credit, such as competency-based and embedded credit. This curriculum framework consists of course descriptions, unit outlines, measurable objectives, interim/benchmark assessments and scoring guides, suggested evidence-based instructional strategies, instructional timelines, and a state online instruction support environment tied to the Common Core K-12 Standards and all other content areas in the P-12 spectrum.

Assessment

To ensure that students at all levels are progressing toward high levels of achievement, Missouri must implement a system of high-quality formative, interim benchmark, and statewide summative assessments aligned to the Common Core Standards for grades K-12 and extending to all content areas. This will be supported by active participation in a national assessment consortium to inform this work. Missouri is a governing member of the SMARTER Balanced Assessment Consortium.

E. Develop an outline of the proposed solutions or actions to address the need/problem/opportunity

Missouri's plan for reform includes the following solutions:

- Ensure technical alignment of high school standards and college entrance requirements with the NGA/CCSSO Common Core K-12 and College-and Career-Readiness Standards;
- Update the Work Ready Standards and align them to NGA/CCSSO Common Core K-12 and College- and Career-Readiness Standards;
- Develop model curriculum;
- Develop training for school districts to implement the Common Core K-12 Standards and updated content and process standards across the P-12 spectrum; and
- Provide Common Core K-12 Standards and professional development regarding implementation of updated standards for LEAs and interested stakeholders.

F. Indicate the resources necessary to implement the actions

The implementation of components necessary to move achievement of Missouri students into the top ten nationally requires the following:

- Support to administer international assessments to allow comparability of the performance of Missouri students with students in other countries;
- Support to reinstate components of the Missouri Assessment Program;
- Support to develop a Curriculum Model that will serve all Missouri schools and guarantee student access to necessary skills and knowledge;
- Development of assessments of Early Learning Standards;
- Funding to expand End-of-Course assessments to additional content areas to tighten the focus of instruction and increased accountability for students; and
- Support for extended learning time to ensure high levels of achievement for all students.

G. Indicate the likely immediate and long-range benefits of the proposed actions/solutions, and the method to measure performance

Mastery of 21st century skills, knowledge of various cultures, and the ability to work effectively in collaboration with others will produce the students who can indeed be effective leaders of tomorrow. The integration and emphasis of STEM content and learning progressions throughout the model curriculum framework will ensure that many more students become interested in these areas at an early age, and seek out a secondary program preparing them for those careers. Because so many of Missouri's Hot Jobs[10] are in STEM related careers, the increased focus on science, technology, engineering, and mathematics from the early grades should produce students who are ready for the transition to success in postsecondary endeavors—college or career.

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[1]Peterson, Paul E. and Frederick Hess. "Few States Set World-Class Standards." *Education Next.* SUMMER 2008/Vol. 8, No. 3. http://educationnext.org/few-states-set-worldclass-standards.

[2]"Missouri Public School Accountability Report." *Missouri Department of Elementary and Secondary Education.* Dec. 2009. http://www.dese.mo.gov/commissioner/statereportcard/src.pdf.

[3]ACT (2010) *2010 College and Career Readiness Report*. ACT, Inc. Iowa City, IA.

[4]"Missouri Public School Accountability Report."

[5]"Measuring Up 2008: The National Report Card on Higher Education." *The National Center for Public Policy and Higher Education.* < http://measuringup2008.highereducation.org/states/index.php>

[6] Ibid.

[7] Ibid.

[8] Ibid.

[9] ACT, 2010.

[10] "Missouri's Hot Jobs 2008-2018." *Missouri Economic Research and Information Center.* Missouri Department of Elementary and Secondary Education. http://dese.mo.gov/divcareered/documents/MCE_Missouri_Hot_Jobs_2008-2018.pdf